# Package 'sqrtn'

March 29, 2019

**Type** Package

**Title** Calculate sqrt(n) with very high precision

**Version** 1.0

**Date** 2019-03-16

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**Description** Calculate sqrt(n) with very high precision, for example 10,000 or bigger.

**License** GPL (>= 2)

**Depends** R (>= 3.2.0)

**Repository** GitHub

**NeedsCompilation** yes

**Encoding** UTF-8

**Archs** i386, x64

## R topics documented:



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`sqrtn-package` *Calculate sqrt(n) with very high precision*

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### Description

Calculate sqrt(n) with very high precision, for example 10,000 or bigger.

### Details

| | |
|---|---|
| Package: | sqrtn |
| Type: | Package |
| Version: | 1.0.1 |
| Date: | 2019-03-28 |
| License: | GPL (>= 2) |

sqrtn *An R pacakge to calculate sqrt(n) with very high precision.*

## Description

Calculate sqrt(n) with very high precision. Currenly, we approximate $\sqrt{2}$, $\sqrt{3}$, and $\sqrt{5}$ only. "sqrtn"" implements dramatically fast. It takes only `2.57` seconds to approximate $\sqrt{2}$ with `10,000` digits, and `2.98` seconds with `100,000` digits.

## Usage

```
sqrtn(prec,n=2)
```

## Arguments

| | |
|---|---|
| `prec` | A non negative integer, which is the precision you want. |
| `n` | A non negative integer, the default is 2. Currently, we can only approximate $\sqrt{2}$. |

## Value

| | |
|---|---|
| `sqrtn` | The digits of the square root of $n$, which is a string. |
| `prec` | The input precision. |

## Author(s)

Xu Liu

## Examples

```
#Example 1
fit <- sqrtn(100)
print(fit$sqrtn,quote=FALSE)

#Example 2
fit <- sqrtn(100,3)
print(fit$sqrtn,quote=FALSE)

#Example 2
fit <- sqrtn(100,5)
print(fit$sqrtn,quote=FALSE)
```

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